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ABSTRACT

R. J. Sternberg and others found that the types of behaviors reported by laypersons as characterizing different types of intelligence varied across the different groups tested, and that a person's concept of intelligence affects the manner in which he or she evaluates the intelligence of others. Two experiments by Sternberg et al. were replicated. In the first, 28 male and 30 female Japanese undergraduate students and 27 male and 30 female U.S. undergraduate students listed behaviors they considered characteristic of academic and everyday intelligence. Using items generated by the college students in Experiment 1 and similar sets of items generated by 4th, 8th, and 11th graders in Japan and the United States, lists of behaviors were constructed and used in Experiment 2 to compare the implicit views of academic and everyday intelligence held by 216 U.S. and 200 Japanese college students. Results indicate that although Japanese students list many behaviors similar to those of the U.S. sample, they emphasize different behaviors, as well as include behaviors not listed by the Americans, particularly with respect to academic intelligence. Japanese females also emphasize thinking skills as an important component of everyday intelligence, while U.S. students do not. Results are interpreted as being related to issues in intercultural communication and social development differences. Twelve tables present study findings and lists of differences. (SLD)

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# Japanese and American Implicit Concepts of Academic and Everyday Intelligence

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Abstract

Sternberg et al. (1981) found that the types of behaviors reported by laypersons as characterizing different types of intelligence varied across the different groups tested and that a person's concept of intelligence affects the manner in which he or she evaluates the intelligence of others. The present study replicated Experiments 1 and 2 of Sternberg et al. In the first study Japanese and American college students listed behaviors that they considered characteristic of academic and everyday intelligence. Using items generated in Experiment 1, Japanese and American students rated the importance of each for each type of intelligence. The results indicated that although the Japanese students listed many behaviors similar to those of the American sample, they tended to emphasize different behaviors as well as include behaviors not listed by Americans, particularly with respect to academic intelligence. Japanese females also tended to emphasize thinking skills as an important component of everyday intelligence whereas U.S. females did not. The results are interpreted as being related to issues in intercultural communication and social development differences.

# Japanese and American Implicit Concepts of Academic and Everyday Intelligence

Although the study of intelligence has a long history in psychology, its definition and measurement have been largely dominated by a Western perspective (Berry, 1986; Berry & Irvine, 1986; Pellegrino, 1986). Berry (1986) suggested "intelligence, as presently used in psychology, to be a culture-bound, ethnocentric, and excessively narrow construct" (p. 35). Berry and other cross-cultural psychologists have argues that although there may be certain cognitive processes that are genetically based, intelligent behaviors or cognitive competencies are defined most appropriately in terms of situational variables, particularly the cultural context in which the individual is reared (Berry, 1986, Berry & Irvine, 1986; Pellegrino, 1986). This position suggests that there may be some variability in those behaviors that are considered to be evidence of intelligence across different cultural contexts. Pellegrino (1986) has further argues that culture plays a role in shaping implicit notions of intelligence, which in turn influences our judgments of the intelligence of others.

Several studies have begun to examine the implicit theories of intelligence held by the average person (e.g., Azuma & Kashiwagi, 1987; Neisser, 1979; Sternberg, Conway, Ketron, & Bernstein, 1981). Based upon the assumption that each individual has an implicit theory or concept of intelligence that "is a prototype-organized Roschian concept" (p. 185) which may or may not match the theories or definitions of intelligence put forth by professional psychologists, Neisser (1979) argued that one task of psychologists studying intelligence should be to research the characteristics associated with intelligence by the average person. In a series of studies Sternberg et al. (1981) investigated opinions about the types of

behaviors characterizing "intelligence," "academic intelligence," and "everyday intelligence" among samples of laypersons and college students studying in a college library. Their initial study had individuals list behaviors characteristic of each type of intelligence. Using the behaviors obtained in the first study, subsequent studies required subjects to rate the importance of the behaviors with respect to each type of intelligence for a specified target person.

Their overall results indicated that people have well-defined concepts about intelligent behaviors which are similar to the opinions of intelligence held by experts. They did, however, find some variation in the conceptions of the different types of intelligence evaluated by the different groups tested as well as variations in the intelligent behaviors listed across the groups tested. Finally, like Pelligrino (1986), Sternberg et al. reported that a person's concept of intelligence affects the way he or she evaluates the intelligence of others.

Azuma and Kashiwagi (1987) conducted a partial replication of Sternberg et al. which examined the concept of intelligence among Japanese college students and their mothers. Using a questionnaire consisting of 67 characteristics of intelligence gathered in an earlier study, their subjects were to think of two intelligent individuals that they knew and rate the degree to which each characteristic would be descriptive of these individuals. Comparing their results to those of Sternberg et al., they concluded that there appear to be both shared and distinctive characteristics associated with intelligence across the two cultures. Shared characteristics seem to be primarily those cognitive abilities ‹at are associated with school performance (e.g., quick thinker, good memory, and good at school). The Japanese subjects, however, were found to emphasize social competencies (e.g., to know one's place) as being

more important than their American counterparts.

Our research was designed to extend Sternberg et al."s analysis of implicit views of intelligence to college students in Japan. Numerous researchers have suggested that one's concept of intelligence depends on contextual factors including culture, the target person's sex, and the situation in which the person to be judged is found (Azuma & Kashiqagi, 1987; Berry, 1986; Berry & Irvine, 1986; Sternberg et al., 1981). Based upon Azuma and Kashiwagi, it was expected that Japanese college students would evidence more variation in the types of behaviors emphasized for everyday intelligence than for academic intelligence when compared to American students.

## Experiment 1

### Method

American (27 males and 30 females) and Japanese (28 males and 30 females) subjects were undergraduate students at Kennesaw State College and Tokyo University of Foreign Studies, respectively. The American subjects were enrolled in introductory psychology classes, while the Japanese subjects was between 18 and 25, $\underline{M}$ = 20.31 for Japanese subjects and $\underline{M}$ = 19.91 for American subjects.

Three surveys were administered to intact psychology classes during a regular class period and subjects in both samples were administered the surveys in the same order. The instructions for each survey asked the subjects to list all of the behaviors that they could think of that were characteristic of general intelligence, everyday intelligence, and academic intelligence. The instructions defining each category of intelligence were on separate pages and the subjects listed their responses in blank spaces below the instructions. The subjects

were given 5 min. to complete each survey. They completed their listing of behaviors for a category of intelligence before being given the next category. They were told not to go back to a previously completed category.

## Results

All responses by the Japanese subjects were translated by Ms. Hiroko Saito. The Japanese students listed a total of 76 behaviors for general intelligence, 55 behaviors for academic intelligence, and 52 behaviors for everyday intelligence. American students listed 79 behaviors for general intelligence, 71 for academic intelligence, and 84 for everyday intelligence. While the overall number of behaviors listed by the Japanese college students (N = 183) is similar to that found by Sternberg et al. (N = 170), the American students in this sample listed a larger number (N = 234) than that reported by Sternberg et al. for their American sample.

In order to simplify the data analysis somewhat, similar behaviors were collapsed together (e.g., thinks before acting, has foresight, and plans ahead were treated as a single category). In addition, only those behaviors that met a criterion of being listed by 10% of one or both of the samples were analyzed. This condensation procedure produced a final list of 60 behaviors that were analyzed.

The correlations between the frequencies with which each of the 60 behaviors was listed for each type of intelligence both between and within the two cultures are shown in Table 1.

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Insert Table 1 about here

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The correlations for the Japanese subjects indicate that general intelligence is perceived to be closely related to both everyday and academic intelligence. Although academic and everyday intelligence are not significantly correlated, it appears that, in general, Japanese subjects perceive the three types of intelligence to be very similar. American subjects, however, produced a greater variety of behaviors for each type of intelligence and the types of intelligence were not as similar. The only significant correlation within the American sample was between general and everyday intelligence. This result was the same as that for the laypersons, not the college students, in Sternberg et al. (1981). They reported that college students perceived academic and general intelligence to be closely related, but different from everyday intelligence.

The correlations between the American and Japanese samples indicate significant agreement in the responses listed for U.S. general with Japanese general, Japanese everyday, and Japanese academic, and for U.S. everyday with Japanese everyday. However, the response frequencies for U.S. academic intelligence were not significantly related to the response frequencies for any other type of intelligence for either the U.S. or Japan.

Comparisons of the most frequently listed behaviors in Japan and the U.S. for each type of intelligence are shown in Tables 2, 3 and 4. Although the Japanese sample listed several behaviors in common with their American counterparts (e.g., knowledgeable and good

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Insert Tables 2, 3, and 4 about here

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judgment or decisions as characteristics of general and everyday intelligence; speaking skills

and timeliness of action for everyday intelligence; and high grades or test scores, ease of learning, and language skills as evidence of academic intelligence), there are significant differences in some of the most frequently listed behaviors between the two cultures for all types of intelligence. For example, quickness of responding appears to be an important characteristic of both general and everyday intelligence for the Japanese, but is listed with a very low frequency by the American sample (nine times for general intelligence and not at all for everyday).

The types of behaviors associated with academic intelligence show the greatest variability between the two samples as would be suggested by the nonsignificant correlation. The Japanese sample appears to have emphasized internal traits (e.g., ability to memorize, quick mind, math and science abilities, and flexible thinking), while the American sample seems to place more importance on overt behaviors, particularly those related to behavior in the classroom (e.g., contributes in class, asks questions, answers questions, attends class, and is prepared for class).

## EXPERIMENT 2

### Method

Using the items generated by the college students in Experiment 1 and similar sets of items generated by samples of fourth, eighth, and eleventh grade students in Japan and the United States, lists of behaviors were constructed which were descriptive of everyday (N = 79) and academic (N = 74) intelligence. Based upon the results of Experiment 1, the categories of general and everyday intelligence were combined. The questionnaires were used to compare the implicit views of academic and everyday intelligence held by U.S. (N = 216)

and Japanese (N = 200) college students. The ages of the subjects and method of survey administration were similar to those of Experiment 1. Equal numbers of male and female subjects were randomly assigned to rate same or different gender targets for one of the two types of intelligence. Using a 5-point scale ranging from Not at all Important (1) to Extremely Important (5), students rated lists of behaviors representing one of the two categories of intelligence.

## Results

Tables 5 through 8 show the lowest and highest rated behaviors for both types of intelligence. Data were analyzed using a principle components factor analysis with varimax

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Insert Tables 5, 6, 7, and 8 about here

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rotation for each type of intelligence and each country separately. Five interpretable factors were identified for each analysis. The factors and the items which had loadings of at least .50 on these factors are listed in Tables 9 through 12.

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Insert Tables 9, 10, 11, and 12 about here

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In the analysis of academic intelligence-U.S., the five factors were labeled school achievement & self discipline, problem-soling ability, social involvement, academic ability, and class participation, and accounted for 21%, 10%, 6%, 5%, and 4% of the variance in the data, for a total of 46%.

The five factors which emerged in the analysis of academic intelligence-Japan were labeled self-discipline, academic ability, academic motivation, problem-solving ability, and verbal ability and accounted for 18%, 8%, 7%, 4%, and 4% of the variance in the data, for a total of 41%.

The analysis of everyday intelligence-U.S. yielded five factors which were labeled social responsibility, problem-solving ability, academic ability, decisiveness, and "ordinary personness", and which accounted for 27%, 9%, 6%, 4%, and 4% of the variance, totalling 50%.

The final analysis of everyday intelligence-Japan resulted in five factors labeled learning ability, social responsibility, problem-solving ability, verbal ability, and social skills. These factors accounted for 20%, 8%, 7%, 4% and 4% of the data variance, for a total of 43%.

The items loading on each factor in the four analyses do not always seem to fit with the assigned labels: however, most of the items do seem to be consistent with the general idea conveyed by each label.

Like the results obtained by Sternberg et al. (1981), our analyses yielded broad conceptions of intelligence in which the subjects "perceived intelligence as comprising quite a bit more than is presumably measured by IQ tests" (p.46).

The Japanese and U.S. subjects have somewhat different views of academic and everyday intelligence. As shown in Tables 9 through 12, many similar behaviors were rated as important indicators of intelligence; however, the behaviors are organized into the factors differently. One factor which cut across both types of intelligence in both countries was a

type of problem-solving ability which seems to be different from academic ability.

Both the Japanese and U.S. college students identified problem-solving ability, academic ability, and self-discipline as important components of academic intelligence. They also included similar items of school achievement or verbal ability. However, a sharp cultural difference appears in that the Japanese identified a separate component for academic motivation, while the U.S. students identified social involvement & popularity and class participation as two major factors underlying their conceptions of academic intelligence.

The Japanese and U.S. students conceptions of everyday intelligence also share common factors. Both cultures considered social responsibility and problem-solving ability as important aspects of everyday intelligence. However, the two groups also differed in their views. The Japanese students emphasized learning ability, verbal skills, and social skills, while the U.S. students identified school achievement, decisiveness, and a kind of "ordinary personness" as factors underlying their conceptions of everyday intelligence.

In addition to the factor analyses, ANOVA's with country, subject gender, and target gender as between-subjects variables have also been completed for each type of intelligence. A large number of significant main effects for country were found for both academic and everyday intelligence.

The ANOVA's also yielded several main effects for target gender in everyday intelligence and main effects for subject gender in academic intelligence. For example, subjects rated a large vocabulary and use of good grammar, good manners, and being nicely dressed as more important in judging the everyday intelligence of a female target than in judging a male target. Also, male subjects considered artistic ability and acting like learning

is easy as more important characteristic of academic intelligence, while female subjects rated concentrating on schoolwork, having good study habits, and helping others learn as more important characteristics of academic intelligence.

Other interesting results of the ANOVA's included several subject gender by country interactions and target gender by subject gender interactions for both types of intelligence. For example, Japanese females were more likely to rate thinking ability as being important in everyday situations than were U.S. females. Since these differences were not evident in the academic data, U.S. females appear to make a distinction between academic and everyday intelligence that Japanese females do not. We are presently analyzing these ANOVA results and are completing additional factor analyses for gender, type of intelligence, and country. These ANOVA and factor analyses results will be reported separately.

## Discussion

These results suggest that there may be some important differences in the manner in which Japanese and Americans view behaviors as characterizing intelligence. The results of both experiments suggest that the Japanese may have a more coherent, unitary concept of intelligence, while Americans seem to evidence a more variable concept of intelligence with academic intelligence being perceived as somewhat different from everyday intelligence. The two cultures seem to have differences in their views of both academic and everyday intelligence. This finding seems to contradict the results reported by Azuma and Kashiwagi (1987) which suggest that a majority of shared characteristics between the two cultures in their views of academic intelligence. U.S. students seem to assign more importance to overt behaviors as evidence of academic intelligence.

One may be tempted to use the strong group identity often associated with the Japanese culture as the underlying contributing factor for the consistency in the concept of intelligence among the Japanese suggested by these results. However, another possibility may be the strong emphasis placed upon education in Japan. The stress on education and academic success may result in a generalization of the importance of these behaviors to a wider variety of situations than is found in the U.S. From a Roschian perspective, behaviors associated with academic intelligence may be more prototypical in Japan than in the U.S. The differences in behaviors emphasized for academic intelligence may also represent different emphases on behavior in the U.S. classroom setting where participation by students tends to be emphasized. These results may have implications for academic exchange programs where students attend classes in different cultures where expectations for appropriate intelligent behavior may vary.

Further examination of the gender differences may add to our understanding of the cultural differences. The significant Country by Sex interactions could also lend support to the hypothesis that the Japanese have a more unitary concept of intelligence, while the U.S. subjects, particularly the females, tend to differentiate between academic and everyday intelligence. These interactions also could be interpreted to support Carol Gilligan's findings that U.S. females become less confident and assertive as they enter adolescence. Japanese females, however, may be encouraged to value and exhibit thinking abilities in both everyday and academic contexts. It is also possible that Japanese females may be reared to perceive that thinking ability is a more important factor in attracting others in everyday, social settings compared to U.S. females.

Further research is being conducted to evaluate differences between the cultures in conceptions of intelligence as a function of age and gender in order to establish developmental trends in the conceptions of intelligence in the two cultures. It is possible that an examination of developmental trends in conceptions of intelligence may contribute to an understanding of the formation of the prototype for types of intelligence in the two cultures. Furthermore, implicit concepts of intelligence may be an important variable affecting classroom behavior both within and between cultures in that views of intelligence may represent an important component of the teacher-student interactions in the classroom. This is suggested by the results of the present study indicating that classroom participation is an important component of academic intelligence in the U.S. but not in Japan.

Finally, research on the evaluation of an individual's intelligence by others needs to be conducted in a variety of situational and cultural contexts. The difference in responses between laypersons and college students reported by Sternberg et al. (1981), the differences in the responses of American college students in our study and those in Sternberg et al., and the differences between Japanese and American samples indicated by our results and those of Azuma and Kashiwagi (1987) all indicate that the implicit concept of intelligence not only varies with the type of intelligence being considered but also with the group being tested. One implication of these studies is that differing conceptions of intelligence may contribute to difficulties in intercultural communication. Our evaluation of the intelligence of another person is largely going to be based upon the match between the person's behaviors and our implicit concept of intelligence. The outcome of that matching process will directly impact the manner in which we interact and respond to that individual and may either facilitate or

inhibit effective communication.

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Table 1

Correlations Between Frequencies of Listed Behaviors for Types of Intelligence Within and Between the U. S. and Japan

| | Japan general | Japan everyday | Japan academic | U.S. general | U.S. everyday | U.S. academic |
|---|---|---|---|---|---|---|
| Japan | | | | | | |
| General | -- | .50** | .46** | .32* | -.01 | -.17 |
| Everyday | -- | -- | .22 | .47** | .30* | -.14 |
| Academic | -- | -- | -- | .28* | -.03 | .24 |
| U.S. | | | | | | |
| General | -- | -- | -- | -- | -- | -- |
| Everyday | -- | -- | -- | .65** | -- | -- |
| Academic | -- | -- | -- | .19 | -.07 | -- |

* $p < .05$ ** $p < .01$

Table 2

Most Frequently Listed Behaviors Characterizing General Intelligence in Japan and the U.S.

| Japan | U.S. |
|---|---|
| Quick witted (56)[a] | Knowledgeable (22) |
| Knowledgeable (40) | Manner of speaking (19) |
| Acts wisely (25) | Dress/grooming (18) |
| Good judgment (22) | Good decisions (17) |
| Rational/logical (22) | Knowledge seeking (15) |
| Talks with wit (21) | Open-minded (13) |
| Is clever/cunning (19) | Does well at school (11) |
| Flashes of inspiration (15) | Thinks before acting (11) |
| Good memory (14) | Observant (10) |
| Unique point of view (10) | Common sense (10) |

[a] Frequency of occurrence

Table 3

Most Frequently Listed Behaviors Characterizing Everyday Intelligence in Japan and the U.S.

| Japan | U.S. |
|---|---|
| Quick witted (32)[a] | Dress/grooming (29) |
| Inventive/originality (26) | Manner of speaking (21) |
| Good talker (25) | Good decisions (14) |
| Good judgment (21) | Confident (13) |
| Is clever/cunning (21) | Open-minded (10) |
| Acts promptly (18) | Social skills (9) |
| Knowledgeable (15) | Knowledgeable (9) |
| Rational/logical (11) | Time management (8) |
| Plans ahead (11) | Vocabulary (8) |
| Excellent thinking power (8) | Manages money (8) |
| | Good posture (8) |
| | Opinions/ideas (8) |

[a] Frequency of occurrence

Table 4

Most Frequently Listed Behaviors Characterizing Academic Intelligence in Japan and the U.S.

| Japan | U.S. |
|---|---|
| Ability to memorize (30)[a] | High grades/test scores (32) |
| High grades/test scores (30) | Study habits (23) |
| Quick mind (27) | Contributes in class (19) |
| Flexible thinking (25) | Asks questions (19) |
| Math and Science ability (24) | Curious (18) |
| Knowledgeable (20) | Answers questions (18) |
| Practical application (15) | Good listener/attentive (14) |
| Ease of learning (13) | Time management (13) |
| Logical (12) | Attends class (9) |
| Sentence construction (11) | Prepared for class (9) |
| | Open-minded (9) |
| | East of learning (9) |
| | Language usage (9) |

[a] Frequency of occurrence

Table 5

Highest Rated Behaviors for Everyday Intelligence

| Japan | U.S. |
|---|---|
| 1. Acts appropriately in different situations (4.60) | 1. Has ability to apply knowledge and previous experience (4.14) |
| 2. Has ability to apply knowledge and previous experience (4.46) | 2. Has ability to learn and understand (4.08) |
| 3. Is quick thinker (4.20) | 3. Uses common sense (3.95) |
| 4. Is curious and seeks knowledge (4.12) | 4. Is aware of what is happening around them (3.81) |
| 5. Comprehends accurately what others say (4.10) | 5. Is curious and seeks knowledge (3.80) |
| 6. Is quick at learning (4.06) | 6. Is open-minded (3.80) |
| 7. Has a broad outlook (4.06) | 7. Comprehends accurately what others say (3.79) |
| 8. Is open-minded (4.06) | 8. Can look after oneself (3.74) |
| 9. Responds and acts quickly (4.02) | 9. Can draw a connection between two things (3.72) |
| 10. Is knowledgeable (knows many things) (4.01) | 10. Makes good decisions (3.68) |

Table 6

Lowest Rated Behaviors for Everyday Intelligence

| Japan | U.S. |
|---|---|
| 1. Is snobby or stuck on oneself (1.17) | 1. Is snobby or stuck on oneself (1.24) |
| 2. Wears glasses (1.17) | 2. Wears glasses (1.27) |
| 3. Is quiet and reserved (1.69) | 3. Is quiet and reserved (1.50) |
| 4. Stays in school and goes to college (1.82) | 4. Has good athletic skills (1.72) |
| 5. Has good posture (1.87) | 5. Is popular and has many friends (1.80) |
| 6. Has good athletic skills (2.11) | 6. Knows many games (1.89) |
| 7. Exhibits good grooming and dresses well (2.18) | 7. Has good posture (1.95) |
| 8. Cooperates in school activities and work (2.20) | 8. Is good at puzzles and similar games (2.10) |
| 9. Is good at math (2.20) | 9. Is artistic (2.19) |
| 10. Is mature, not childish (2.20) | 10. Can operate machines (2.27) |

Table 7

Highest Rated Behaviors for Academic Intelligence

| Japan | U.S. |
|---|---|
| 1. Has ability to apply knowledge and previous experience (4.23) | 1. Thinks for oneself (4.20) |
| 2. Can express one's own opinion (4.22) | 2. Can draw a connection between two things (4.19) |
| 3. Is creative (4.20) | 3. Is open-minded (4.18) |
| 4. Can come up with one's own questions or topics for projects (4.18) | 4. Has ability to apply knowledge and previous experience (4.12) |
| 5. Has a flexible way of thinking (4.12) | 5. Studies to understand content, not just memorize (4.02) |
| 6. Is open-minded (4.09) | 6. Is motivated to learn (3.89) |
| 7. Can explain a difficult matter in simple language (4.08) | 7. Has ability to understand course content (3.88) |
| 8. Studies to understand content, not just memorize (4.05) | 8. Has a flexible way of thinking (3.87) |
| 9. Can consider a problem in a comprehensive way (4.00) | 9. Makes a thorough investigation of something (3.85) |
| 10. Makes a thorough investigation of something (3.82) | 10. Is skilled at reading (3.72) |

Table 8

Lowest Rated Behaviors for Academic Intelligence

| Japan | U.S. |
|---|---|
| 1. Wears glasses (1.07) | 1. Is a nerd (1.20) |
| 2. Is a nerd (1.09) | 2. Wears glasses (1.21) |
| 3. Acts and talks like learning is easy (1.18) | 3. Carries a lot of books (1.28) |
| 4. Sits in front row in the classroom (1.22) | 4. Is a student at a prestigious school (1.55) |
| 5. Carries a lot of books (1.24) | 5. Sits in front row in the classroom (1.56) |
| 6. Interacts with teachers a lot (1.67) | 6. Has good athletic skills (1.69) |
| 7. Stays in school and goes to college (1.79) | 7. Is popular and has many friends (1.79) |
| 8. Does not act silly (is serious) (1.80) | 8. Acts and talks like learning is easy (1.89) |
| 9. Has neat handwriting (1.81) | 9. Does extra school work that is not assigned (1.94) |
| 10. Behaves correctly in class (1.87) | 10. Has neat handwriting (1.98) |

Table 9

Academic Intelligence Factors - U.S.

| Factor Loading | Factor |
|---|---|
| | FACTOR 1: Academic achievement & self-discipline |
| .81 | gets school work done on time or ahead of time |
| .80 | prepares for clas and does homework |
| .73 | has good study habits and studies a lot |
| .71 | has good spelling, vocabulary, and grammar |
| .68 | gets high grades or test scores |
| .66 | concentrates on school work |
| .55 | is organized and neat |
| .54 | is good at taking class notes |
| .54 | does not forget to bring things to school |
| .53 | cooperates within a group |
| .52 | has a good memory or ability to memorize |
| .52 | pays attention in class |
| | FACTOR 2: Problem-solving ability |
| .71 | is open-minded |
| .69 | can consider a problem in a comprehensive way |
| .66 | studies to understand content, does not just memorize information |
| .64 | has the ability to apply knowledge and previous experience |
| .59 | is full of curiosity |
| .58 | is motivated to learn |
| .55 | can draw a connection between two things |
| .53 | pays attention in class |
| | FACTOR 3: Social involvement |
| .80 | has good athletic skills or is good at sports |
| .77 | exhibits good grooming and dresses well |
| .73 | is popular and has many friends |
| .65 | is well-mannered |
| .61 | is artistic (e.g., dances, draws, plays a musical instrument) |
| .61 | participates in exracurricular activities |
| .56 | wears glasses |
| .50 | has neat handwriting |

(table continues)

FACTOR 4: Academic ability

.73 is in accelerated classes or is among the best students in class
.73 gets high grades without even studying hard
.72 understands things easily
.51 has a high IQ
.50 is quick to understand what another person says

FACTOR 5: Class participation

.71 asks questions in class
.56 answers questions in class
.55 participates in class discussion
.50 helps others learn

Table 10

Academic Intelligence Factors - Japan

| Factor Loading | Factor |
|---|---|
| | FACTOR 1: Self-discipline |
| .73 | gets school work done on time or ahead of time |
| .68 | is well-mannered |
| .66 | is organized and neat |
| .63 | cooperates within a group |
| .61 | prepares for class and does homework |
| .57 | exhibits good grooming and dresses well |
| .53 | participates in extracurricular activities |
| .51 | does not forget to bring things to school |
| .50 | is good at taking class notes |
| | FACTOR 2: Academic ability |
| .73 | is in accelerated classes or is among the best students in class |
| .72 | gets high grades without even studying hard |
| .68 | has a high IQ |
| .66 | has a god memory or ability to memorize |
| .63 | understands things easily |
| .62 | gets high grades or test scores |
| .51 | has ability to understand course content (e.g., lectures, films, and books) |
| | FACTOR 3: Academic motivation |
| .76 | does extra school work that is not assigned |
| .69 | is motivated to learn |
| .57 | studies to understand content, does not just memorize information |
| .56 | concentrates on school work |
| .56 | pays attention in class |
| .53 | makes a thorough investigation of something |
| | FACTOR 4: Problem-solving ability |
| .75 | is open-minded |
| .67 | is full of curiosity |
| .64 | has a flexible way of thinking |
| .57 | has good athletic skills or is good at sports |
| .57 | is creative |

(table continues)

FACTOR 5: Verbal ability

.70 gives concise answers
.67 is logical
.66 can explain a difficult matter in simple language
.53 is quick to understand what another person says
.50 can consider a problem in a comprehensive way

Table 11

Everyday Intelligence Factors – U.S.

| Factor Loading | Factor |
|---|---|
| | FACTOR 1: Social responsibility |
| .81 | respects and obeys parents and others |
| .80 | is kindhearted and helps others in need |
| .79 | is well-mannered |
| .76 | has a positive attitude |
| .75 | exhibits good grooming and dresses well |
| .72 | obeys laws and rules |
| .72 | is physically healthy |
| .72 | has good social skills |
| .68 | creates a warm atmosphere among those present |
| .66 | has a positive self-image and is self-confident |
| .66 | leads an orderly life |
| .64 | is economical or thrifty |
| .64 | can control oneself and stay calm |
| .64 | acts responsibly and meets expectations |
| .63 | takes good care of things |
| .63 | does not get into trouble or fights |
| .62 | gets along well with other people |
| .57 | is a good listener |
| .55 | is popular and has many friends |
| .54 | does not give a bad impression of oneself |
| .53 | is mature, not childish |
| .51 | makes good decisions |
| .51 | is witty or has a good sense of humor |
| .50 | avoids dangerous things or activities |

(table continues)

FACTOR 2: Problem-solving ability

.70 has foresight
.62 is open-minded
.61 is a quick thinker
.59 is quick at learning
.58 is curious and seeks knowledge
.58 is good at collecting information
.55 is quick to understand what another person says
.52 thinks before acting or speaking
.52 is aware of what is happening around them
.50 comprehends accurately what others say
.50 has a broad outlook
.50 is creative or ingenious in solving everyday problems

FACTOR 3: Academic ability

.76 has good academic skills
.72 makes good grades
.62 reads a lot of books
.61 stays in school and goes to college
.58 is good at math
.57 has a high IQ

FACTOR 4: Decisiveness

.74 forms and sticks to one's own opinions
.65 responds and acts quickly
.64 does not repeat the same mistake

FACTOR 5: "Ordinary personness"

.70 is not snobby or "stuck on oneself"
.59 has ability to learn and understand
.57 uses common sense

Table 12

Everyday Intelligence Factors – Japan

| Factor Loading | Factor |
|---|---|
| | FACTOR 1: Learning ability |
| .69 | is knowledgeable (knows many things) |
| .65 | is curious and seeks knowledge |
| .63 | is quick at learning |
| .61 | has the ability to memorize |
| .59 | is a quick thinker |
| .58 | has foresight |
| .54 | has strong intuition |
| .53 | has an abundant stock of topics to talk about |
| .52 | is quick to understand what another person says |
| | FACTOR 2: Social responsibility |
| .76 | exhibits good grooming and dresses well |
| .73 | is well-mannered |
| .62 | uses common sense |
| .59 | leads an orderly life |
| .58 | is economical or thrifty |
| .54 | respects and obeys parents and others |
| .52 | obeys laws and rules |
| .52 | is kindhearted and helps others in need |
| .51 | has a large vocabulary and uses correct grammar |
| .51 | has good posture |
| | FACTOR 3: Problem-solving ability |
| .64 | thinks before acting or speaking |
| .60 | is creative or ingenious in solving everyday problems |
| .60 | has a broad outlook |
| .55 | does not repeat the same mistake |
| .54 | is good at collecting information |
| .53 | can look after oneself |
| .53 | is aware of what is happening around them |
| .51 | has the ability to apply knowledge and previous experience |

(table continues)

FACTOR 4: Verbal ability

.69 is a good conversationalist
.68 is clever or cunning
.66 is articulate
.57 knows many games (e.g., card games, board games, etc.)
.50 has an abundant stock of topics to talk about

FACTOR 5: Social skills

.77 creates a warm atmosphere among those present
.68 is a good listener
.62 has good social skills
.60 is open-minded
.57 comprehends accurately what others say